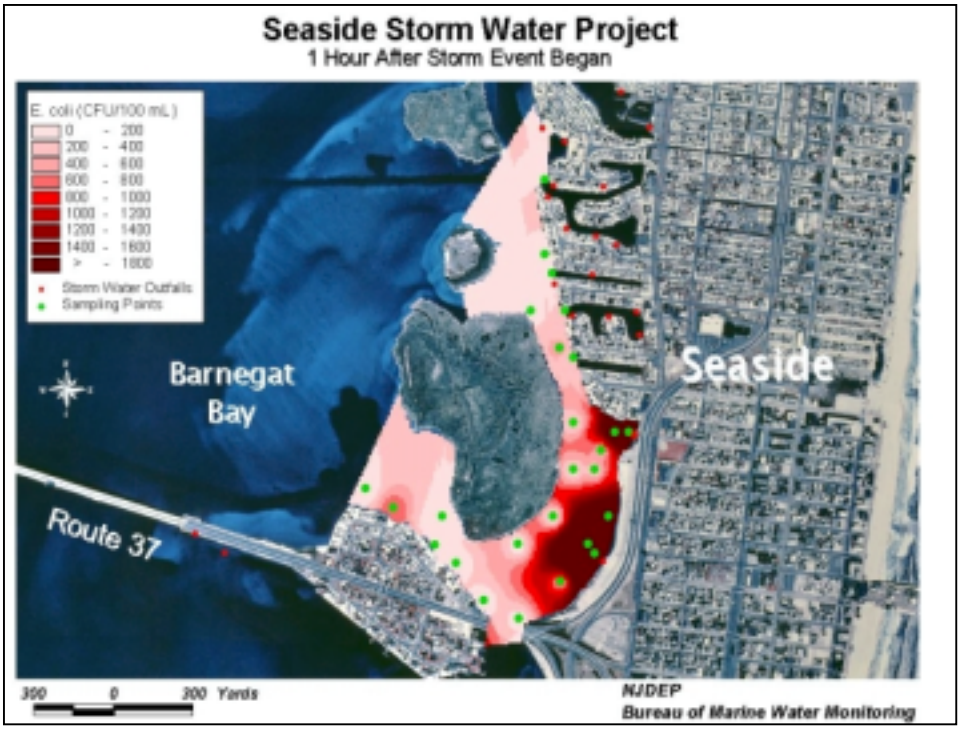
Alternate Microbial Indicator Monitoring

Traditional indicators (fecal coliform, *Enterococcus* , *E. coli*) can come from humans, but can also come from domestic animals and wild animals. There are a number of non-traditional indicators (alternate indicators) that are emerging as valuable tools for the identification of sources of fecal pollution. These new indicators can provide much better information about the source of the fecal pollution, distinguishing between human, domestic animal and wild animal sources. Some of the more promising of these new indicators include RNA Coliphage and Multiple Antibiotic Resistance (MAR). The Bureau of Marine Water Monitoring has a limited capability to test for RNA Coliphage and has successfully applied that capability to various projects over the past 10 years, including the Seaside storm water project depicted in the graph below. In the future, the Bureau may be expanding its capability to include Multiple Antibiotic Resistance, as well as the capacity to handle the increasing demand for RNA Coliphage testing.



In this study, two stormwater outfalls were found to be impacting this bathing area. RNA Coliphage analysis determined that one of the two outfalls was primarily of a human source while the other was not. This information directed appropriate corrective actions.

Other states are using alternate indicators to address TMDLs. In Maryland, alternate indicators are being used to assist in identifying non-point source pollution and to determine bacterial loadings. Alternate indicators have also been used successfully in Virginia as a component of a TMDL and are being made a component of routine water quality monitoring. Similarly, New Jersey is planning to apply alternate indicators to develop more meaning microbial TMDLs.